

CLAIMS

- 1 A method of screening for compounds comprising the steps of
 - a) obtaining a sample of free Postsynaptic density-95 protein;
 - b) taking a first NMR spectrum of the free PDZ domain of said free Postsynaptic
5 density-95 protein;
 - c) adding a test compound into said sample of free Postsynaptic density-95 protein
to form a test sample;
 - d) incubating said test compound with said PDZ domain to allow binding reaction;
 - e) taking a second NMR spectrum of said incubated PDZ domain;
 - 10 f) comparing said first and second NMR spectra wherein binding reaction is
identified.
- 2 A method according to claim 1 wherein said method further comprises the step of :
 - (g) identifying test samples that cause chemical shift changes to amino acid residues
in the second α -helix and the second β -strand of PSD-95 PDZ2.
- 15 3 A method according to claim 2 wherein said amino acid in step (e) is at least one
amino acid selected from the group consisting of glycine 169-alanine 175 in the
second β -strand and histidine 225 to lysine 233 the second α -helix of PSD-95 PDZ2.
- 4 A method according to claim 1 wherein said test sample contains flavonoids.
- 5 A method according to claim 2 wherein said test sample contains flavonoids.
- 20 6 A method according to claim 3 wherein said test sample contains flavonoids.
- 7 A method according to claim 1 wherein said test sample contains a crude herbal
extract.

8 A method according to claim 7 further comprising separating the components of said crude herbal extract; and repeating steps (a) to (d) to identify active ingredients therein.

9 A method according to claim 5 wherein said crude extract is an aqueous extract.

5 10 A method of treatment of brain damage in humans resulting from hypoxic or ischemic insults comprising administering an effective dose of baicalin, oroxylin A-glucuronide (oroxylside), wogonoside or nor-wogonoside.

11 A pharmaceutical composition comprising a substantially pure form of at least one flavanoid selected from a group comprising baicalin, oroxylin A-glucuronide
10 (oroxylside), wogonoside and nor-wogonoside.

12. The method of Claim 1, wherein said Post-synaptic density 95 protein comprises the sequence of SEQ ID NO: 2.

13. The method of Claim 1, wherein said Post-synaptic density 95 protein comprises a polypeptide with at least 50% amino acid identity to the sequence of SEQ ID
15 NO: 2.

14. The method of Claim 1, wherein said Post-synaptic density 95 protein comprises the sequence of SEQ ID NO: 6.

15. The method of Claim 1, wherein said Post-synaptic density 95 protein comprises a polypeptide with at least 50% amino acid identity to the sequence of SEQ ID
20 NO: 6.

16. The method of Claim 1, wherein said Post-synaptic density 95 protein is encoded by a nucleic acid which hybridizes under stringent conditions to a

nucleic acid comprising a sequence selected from the group consisting of SEQ ID NO: 1 and SEQ ID NO: 5.

17. A method of screening for compounds comprising the steps of
obtaining a sample comprising the PDZ-2 domain of Post-synaptic density 95
protein;

taking a first NMR spectrum of said PDZ-2 domain of Post-synaptic density 95
protein;

adding a test compound into said sample comprising the PDZ domain of Post-
synaptic density 95 protein to form a test sample;

incubating said test compound with said PDZ domain to allow a binding
reaction;

taking a second NMR spectrum of said incubated PDZ domain; and

comparing said first and second NMR spectra wherein said binding reaction is
identified.

18. The method of Claim 17, wherein said PDZ domain comprises the sequence of
SEQ ID NO: 4.

19. The method of Claim 17, wherein said PDZ domain comprises a polypeptide
with at least 50% amino acid identity to the sequence of SEQ ID NO: 4.

20. The method of Claim 17, wherein said PDZ domain comprises the sequence of
SEQ ID NO: 8.

21. The method of Claim 17, wherein said PDZ domain comprises a polypeptide
with at least 50% amino acid identity to the sequence of SEQ ID NO: 8.

22. The method of Claim 17, wherein said PDZ domain is encoded by a nucleic acid which hybridizes under stringent conditions to a nucleic acid comprising a sequence selected from the group consisting of SEQ ID NO: 3 and SEQ ID NO: 7.